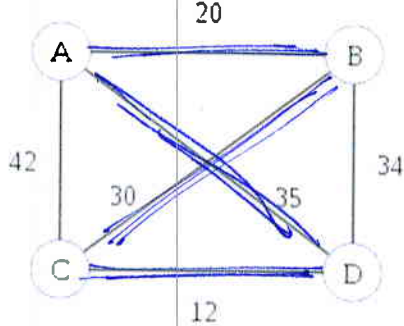


Instructions: For each of the graphs below, use the Nearest Neighbor Algorithm and the Cheapest Link algorithm to approximate an optimal circuit. Find the total and compare your results.

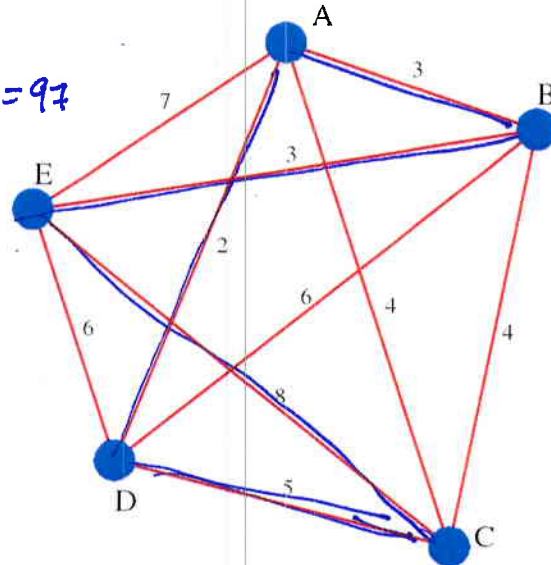
NNA - ABCDA = 20 + 30 + 12 + 35 = 97

Cheapest Link

Same circuit = 97

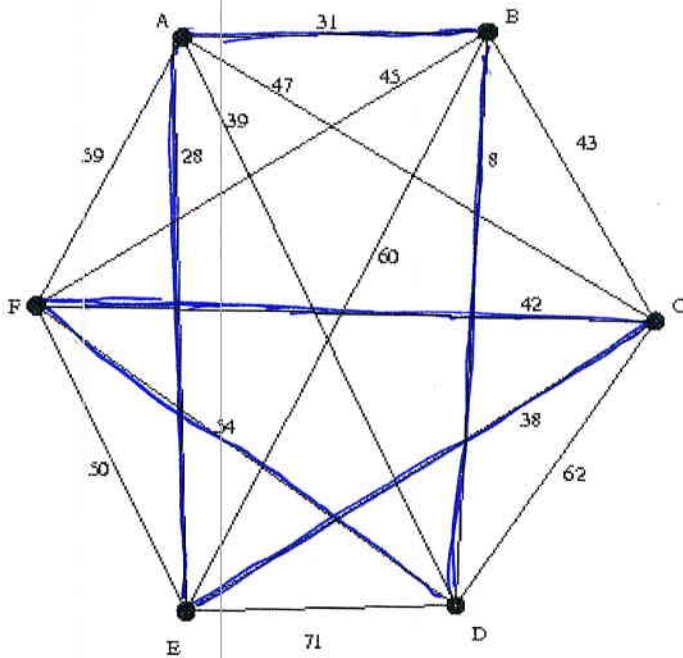


1.



NNA - ADCBEA = 2 + 5 + 4 + 3 + 7 = 21

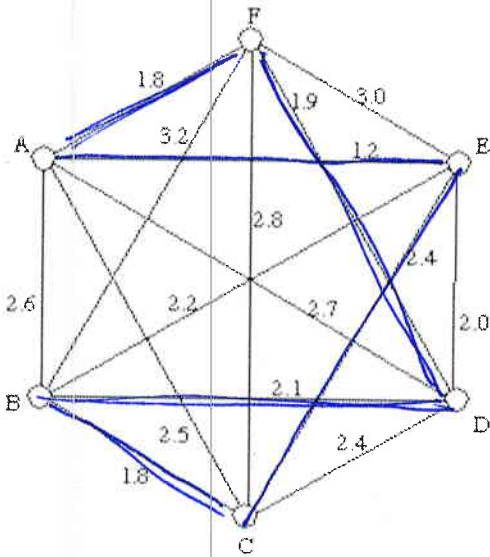
CL - 2 + 3 + 3 + 5 + 8 = 21 also



3.

NNA - AECFBDA = 28 + 38 + 42 + 45 + 8 + 39 = 200

CL = 8 + 28 + 31 + 38 + 42 + 54 = 201



NNA - AEDFCBA

$$1.2 + 2.0 + 1.9 + 2.8 + 1.8 + 2.6 = 12.3$$

$$CL - 1.2 + 1.8 + 1.8 + 1.9 + 2.1 + 2.4 = 11.2$$

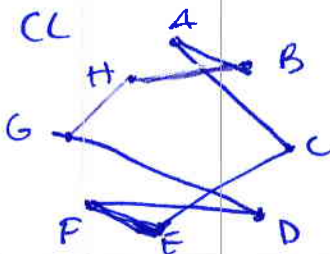
4.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
A	1	1	2	4	9	8	3	2	1	5	7	1	2	9	3
B	1	1	5	3	7	2	5	1	3	4	6	6	6	1	9
C	2	5	1	6	1	4	7	7	1	6	5	9	1	3	4
D	4	3	6	1	5	2	1	6	5	4	2	1	2	1	3
E	9	7	1	5	1	9	1	1	2	1	3	6	8	2	5
F	8	2	4	2	9	1	3	5	4	7	8	3	1	2	5
G	3	5	7	1	1	3	1	2	6	1	7	9	5	1	4
H	2	1	7	6	1	5	2	1	9	4	2	1	1	7	8
I	1	3	1	5	2	4	6	9	1	3	3	5	1	6	4
J	5	4	3	4	1	7	1	4	3	1	9	1	8	5	2
K	7	6	5	2	3	8	7	2	3	9	1	2	1	8	1
L	1	6	9	1	6	3	9	1	5	1	2	1	5	4	3
M	2	6	1	2	8	1	5	1	1	8	1	5	1	9	6
N	9	1	3	1	2	2	1	7	6	5	8	4	9	1	7
O	3	9	4	3	5	5	4	8	4	2	1	3	6	7	1

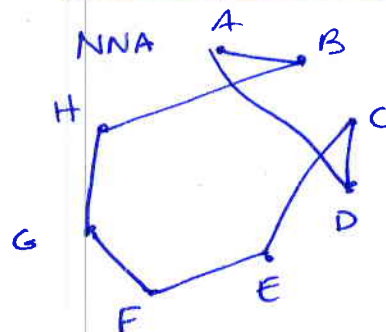
5.

City	a	b	c	d	e	f	g	h
a	17	47	27	73	61	57	51	23
b	17	17	37	73	72	74	66	0
c	27	37	17	48	35	49	65	50
d	73	73	48	17	17	82	113	95
e	61	72	35	47	17	38	80	78
f	57	74	49	82	38	17	48	65
g	51	66	65	113	80	48	17	47
h	23	40	50	95	78	65	40	17

6.

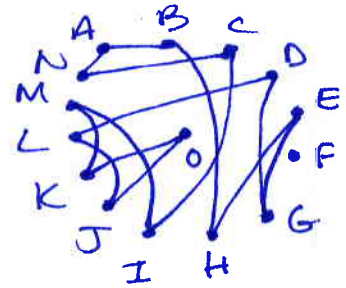


$$17 + 27 + 35 + 38 + 40 + 82 + 113 = 392$$

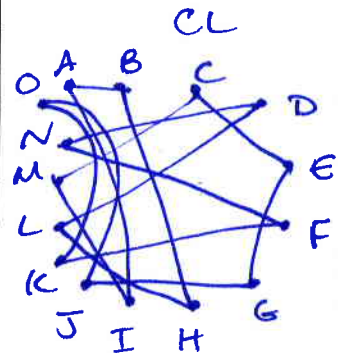


$$17 + 40 + 40 + 48 + 38 + 35 + 48 + 73 = 339$$

answers may vary
NNA

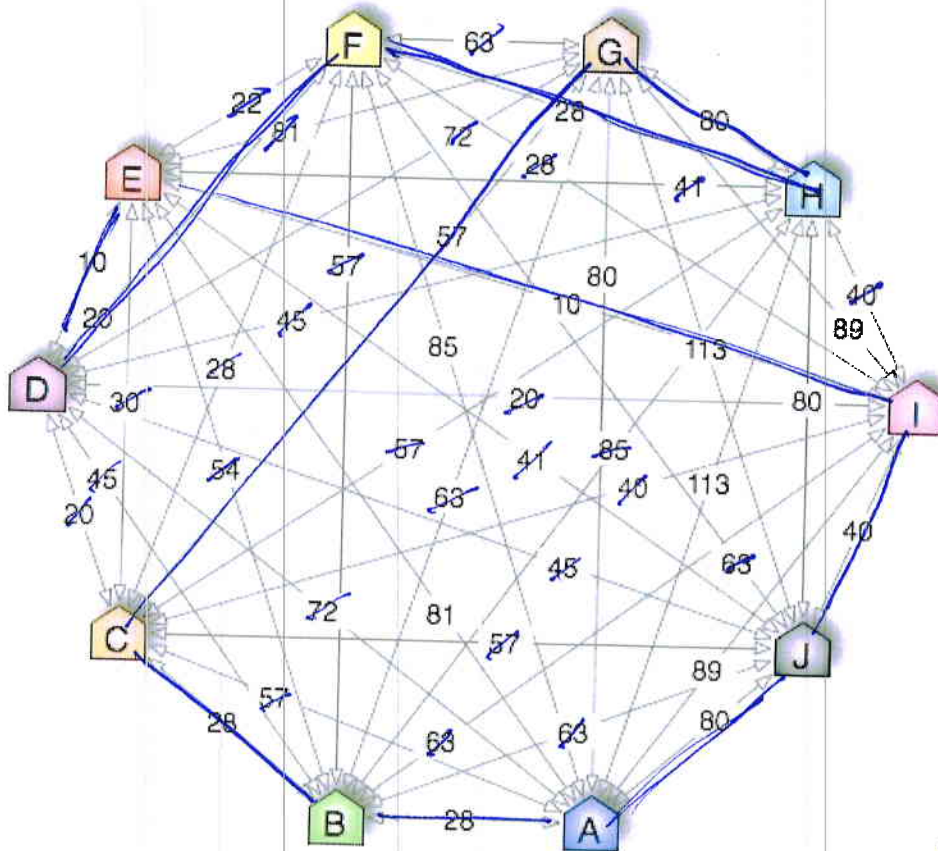


$$1 + 1 + 1 + 1 + 1 + 1 + 2 + 1 + 1 + 1 + 1 + 3 + 9 = 25$$



$$1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 2 + 2 + 8 = 24$$

7. For the graph below, write it as a table, and then apply Nearest Neighbor and Cheapest Link.



NNA = ABCDEIFHGJA

$$28 + 28 + 20 + 10 + 10 + 28 + 28 + 80 + 113 + 80 = 425$$

CL

$$10 + 10 + 20 + 28 + 28 + 28 + 40 + 57 + 80 + 80 = 381$$